Remarks

Status of the Application

The Office rejected Claims 1-21 under 35 U.S.C. § 103(a) as unpatentable over *Rosenberg* (U.S. 6,259,382) in light of *Snibbe* (U.S. 6,496,200).

U.S. Patent 6,259,382 (*Rosenberg*)

Rosenberg teaches a force feedback interface having isotonic and isometric modes of operation. *See, e.g., Rosenberg* Abstract. Much of *Rosenberg's* teaching concerns specific two-dimensional device embodiments. *See, e.g.*, Figures 1-7, columns 5-25. The remainder of *Rosenberg* generally concerns specific two-dimensional user interfaces, including detail about specific force profiles, software implementations corresponding to the two-dimensional devices, and integration with existing planar window-based interfaces. *See, e.g., Rosenberg* Figures 8-16, columns 26-50.

U.S. Patent 6,496,200 (*Snibbe*)

Snibbe teaches a haptic interface device, providing a haptic display of an environment. *Snibbe* teaches changing the resolution of the haptic display based on interactions with the user. *See, e.g.,* Snibbe Abstract. *Snibbe's* haptic interactions comprise simulated detents in rotation of a knob, a squeezable bulb or handle, and a force-sensing arm. *See, e.g., Snibbe* column 10. *Snibbe* teaches a system that allows a user to interact with differing haptic resolutions, where **resolution** is defined by *Snibbe* to be the magnitude of change in haptic sensation per unit change in the environment. *See Snibbe* column 5 lines 6-9. *Snibbe* teaches that the system allows the user to interact at different levels of haptic detail. *See Snibbe* column 5 lines 32-40. *Snibbe* teaches non-haptic resolution control if the user is navigating haptically. *See Snibbe* column 14 lines 6-13. *Snibbe* teaches communication of feedback force in two dimensions to a user, but has no mention of force input from a user or force-based interactions in three dimensions. *Snibbe* has no mention of scrolling in computer representations of documents.

Combination of *Rosenberg* and *Snibbe*

Applicant submits that the combination of *Rosenberg* and *Snibbe* does not establish a *prima facie* case of obviousness of the Claims because there is no teaching or suggestion for making the Office's combination. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *See* MPEP 2143.01. The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. *See* MPEP 2142.

The Office's combination appears to rely on the substitution of *Snibbe's* haptic resolution control teaching with *Rosenberg's* force-based scrolling. However, there is no suggestion or motivation in *Snibbe* or

Rosenberg to do so. *Snibbe* teaches the use of haptic feedback to control the resolution of a haptic display, where resolution means the magnitude of change of haptic sensation. *See, e.g., Snibbe* Abstract; *Snibbe* column 5 lines 6-9. *Snibbe* teaches no way to combine resolution control with haptic navigation. Instead, *Snibbe* teaches that, if haptics are used for navigation, then the resolution control can be accomplished by a separate, non-haptic input. *See Snibbe*, column 14 lines 6-13. Accordingly, combining *Snibbe* with *Rosenberg* requires that the haptic resolution control of *Snibbe* be changed to a non-haptic control, and that *Snibbe's* change in magnitude of haptic sensation be changed to scrolling or zooming – a combination that changes the principal of operation of a reference is not proper. *See* MPEP 2143.01 ("If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)"). Applicants submits that the combination of *Snibbe* with *Rosenberg* is not suggested by the art, and that consequently there is no *prima facie* case of obviousness of Claims 1-21. Applicant urges that Claims 1-21 are in condition for allowance.

The combination as applied by the Office to specific Claims

Even if the combination is proper, Applicant submits that the combination as applied to certain of the Claims does not establish a *prima facie* case of obviousness. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *See* MPEP 2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). The Office stated that *Rosenberg* was missing: displaying a portion of an item; a haptic boundary; a scrolling zone portion of a haptic space; and a scrolling zone portion of a haptic space disposed near an edge of the display. *See* Office Action Page 2, lines 5-7. The Office asserted that *Snibbe* supplied the missing teachings, citing various portions of *Snibbe*. As discussed below, Applicant submits that *Snibbe* does not supply the missing teachings, and that consequently there is no *prima facie* case of obviousness of the corresponding claims. Further, the Office provided no explanation of the rationale for the rejection of independent Claim 21. As discussed below, Applicant submits that the combination does not teach or suggest all the limitations of Claim 21 and consequently that there is no *prima facie* case of obviousness of Claim 21.

The combination as applied by the Office to Claim 3

Claim 3 recites the limitation that the subject item is a computer representation of a document. The Office stated that *Snibbe* teaches items such a computer representations of documents. *See* Office Action page 2 lines 16-17, citing *Snibbe* column 3, line 61 through column 4, line 40. Applicant respectfully traverses this assertion regarding *Snibbe*. *Snibbe* does not teach scrolling in a computer representation of a document. In the passage cited by the Office, *Snibbe* describes a hardware configuration, and

relationships between haptic resolution control and haptic display, but has no mention of documents. Accordingly, since the art does not teach or suggest all the limitations of Claim 3, there is no *prima facie* case of obviousness. *See* MPEP 2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant urges that Claim 3, and Claim 5 depending therefrom, are in condition for allowance. *See* MPEP 2143.03; *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

The combination as applied by the Office to Claim 5

The limitation to a computer representation of a document, in parent Claim 3, has already been discussed. Claim 5 further adds the limitation that scrollable boundaries correspond to boundaries of the display, and that scrolling in certain directions is disabled when the document is in certain configurations. The Office asserted that *Snibbe* taught these limitations. *See* Office Action page 2 lines 20-24, citing *Snibbe* column 4, line 46-65 and column 5, lines 31-63. Applicant respectfully traverses this assertion. *Snibbe* has no mention of documents, scrolling, or scrollable boundaries. In the first passage cited by the Office, *Snibbe* describes the operation of a haptic interface device and communication among a haptic model, an input device, and an environment interaction, with no mention of documents, scrolling, or scroll zone or display boundaries. In the second passage cited by the Office, *Snibbe* teaches changing resolution of a haptic display with no mention of documents, scrolling, or scroll zone or display boundaries. The passages cited, and the whole of Snibbe's teaching, do not supply the missing elements. Accordingly, the art does not teach or suggest all the limitations of Claim 5, and there is no *prima facie* case of obviousness. *See* MPEP 2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant urges that Claim 5 is in condition for allowance.

The combination as applied by the Office to Claim 13

Claim 13 recites the limitation that a control portion of the haptic space comprises providing haptic boundaries separating the control portion from the rest of the haptic space. The Office asserted that *Snibbe* taught those limitations. *See* Office Action page 3 lines 12-14, citing *Snibbe* column 6, lines 7-55. Applicant respectfully traverses this assertion. *Snibbe* has no teaching of control portions as in Applicant's claims, and consequently has no teaching of haptic boundaries associated with control portions. In the passage cited by the Office, *Snibbe* describes changing resolution of a haptic display, changing among discrete resolutions of a haptic display, and a number of things that can benefit from changing resolution of their haptic display. There is no mention of control portions or boundaries in the cited passage, or anywhere else, in *Snibbe*. Accordingly, since the art does not teach or suggest all the limitations of Claim 13, there is no *prima facie* case of obviousness. *See* MPEP 2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant urges that Claim 13 is in condition for allowance.

The combination as applied by the Office to Claim 21

Independent Claim 21 concerns a three-dimensional control zone, and interaction with a user according to transitions relative to the three-dimensional control zone. The Office did not provide any rationale or explanation for a finding of obviousness based on the cited art. As discussed previously, *Snibbe* has no teaching or suggestion of control zones. Further, neither *Snibbe* nor *Rosenberg* has any teaching of three-dimensional control zones, or interaction with a user according to a three-dimensional control zone. Accordingly, the art does not teach or suggest all the limitations of Claim 21, and there is no *prima facie* case of obviousness. *See* MPEP 2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant urges that Claim 21 is in condition for allowance.

New Claim 22

Claim 22 has been added, depending from Claim 21. As discussed above, the art does not establish a *prima facie* case of obviousness of Claim 21, and accordingly Claim 22 is also in condition for allowance. *See* MPEP 2143.03; *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

New Claim 22 adds further definition relative to a specific three-dimensional control zone embodiment, and specific determinations of control zone interactions. Claim 22 defines a control zone comprising a three-dimensional portion of a three-dimensional space, and having an entry region and an active region. *See* Claim 22.b). The method of Claim 22 comprises determining transitions into and out of the control zone according to specific three-dimensional motion of an input device by a user. As discussed before, neither *Rosenberg* nor *Snibbe* teaches or suggests three-dimensional interaction, three-dimensional control zones, or the specific transitions recited in Claim 22. Accordingly, there is no *prima facie* case of obviousness of Claim 22. *See* MPEP 2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant urges that Claim 22 is in condition for allowance.

New Claim 23

Claim 23 has been added, depending from Claim 21. As discussed above, the art does not establish a *prima facie* case of obviousness of Claim 21, and accordingly Claim 23 is also in condition for allowance. *See* MPEP 2143.03; *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

New Claim 23 adds further definition relative to a specific three-dimensional control zone embodiment, and specific determinations of control zone interactions. Claim 23 defines a control zone that is active in a subset of the z dimension of a three-dimensional space. *See* Claim 23.b). The method of Claim 22 comprises determining transitions into and out of the control zone according to motion of a three-dimensional input device by a user. As discussed before, neither *Rosenberg* nor *Snibbe* teaches or suggests three-dimensional interaction, three-dimensional control zones, or the specific transitions recited in Claim 23. Accordingly, there is no *prima facie* case of obviousness of Claim 23. *See* MPEP 2143.03;

In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant urges that Claim 23 is in condition for allowance.

Conclusion

Applicant has responded to each and every rejection and urges that the Claims as presented are in condition for allowance. Applicant requests expeditious processing to issuance.

Respectfully submitted,

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date

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